

Speciality Welds

Experts to the Welding Industry

Welding Engineers & Consultants

Manufacturers & Suppliers of Welding/Cutting Consumables & Equipment

Welding Inspection, Examination & Surveyor Services

Welder Training & Qualification Testing

Underwater Wet Welding
'A Welder's Mate'
Book Publishers

www.specialwelds.com sales@specialwelds.com

Welding Consultancy

WPS Development & Approval

Welder Training / Qualification Testing

Welding Inspection, NDT & Destructive Weld Testing

Specialist Welding

Manufactures & Suppliers of Welding Consumables & Equipment

The company was originally formed in 2002 by our Managing Director Mr. David J. Keats, following a MBO from the MOS International Plc Group. However, David has worked exclusively in the welding industry since the early 70's, having initially he served his time as a welder and has extensive experience in the following industries;

- Pressure vessels
- Process pipe work
- Hydraulics
- Chemical
- Railways
- Glass mould industry
- Aircraft
- Structural steel and bridges
- Lifting & HGV Trailer equipment
- Marine
- Off-shore
- Commercial Diving operations

During the 80's David gained various qualifications in non destructive testing (NDT), including ultrasonic, magnetic particle and dye penetrant inspection and welding inspection. David qualified as an air diver in 1983, working as both a wet and dry hyperbaric welder in the offshore and civil engineering sectors. In 1987 David set up and ran 'Hydromech Technical Services Ltd', based in Leeds, West Yorkshire. In 1988 he qualified as a welding instructor with the STA College as well as completing other technical TWI welding qualifications. In 1990 David wrote his first book 'The Professional Divers Manual on Wet Welding', published by Woodhead Publishing (part of the TWI publishing house). In 1991 David ran the UK's first National Qualification in underwater welding, through The Marine & Engineering Training Association and began offering training in the UK and overseas. In 1994 HTS became the UK's only approved an M&ETA test/assessment centre. Continuing with his studies, in 1992 David qualified as an International/European welding technologist

and received a Diploma in welding engineering and technology from TWI. In 1997 he gained a National Certificate in metals technology from Bradford & Ilkley College. More recently, in 2000 David qualified as a Senior Welding Inspector. In 2004 he completed the second revised edition of his book, 'A Welder's Mate', published by Troubador. Presently David is preparing his thesis for senior member of TWI/BINDT and CEng status.



David (left) receiving his UCI subsea innovation awards trophy from Roger O'Kane, secretary of the Association of Diving Contractors, at the 2006 inshore diving conference in London. The award was given for outstanding contribution to industry, for a number of innovations.

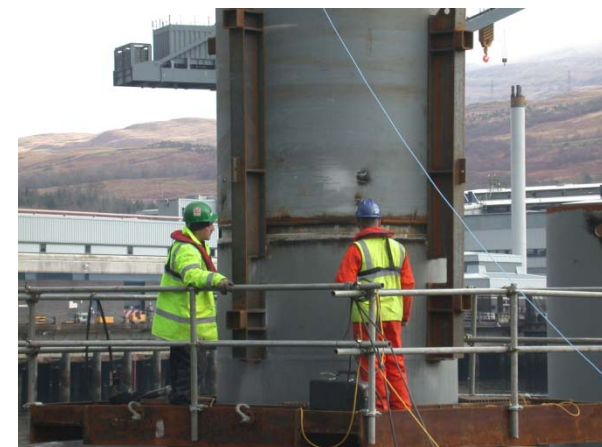
Official DTi Smart Award winners, November 2003 for David's Hammerhead Wet-Spot Welding Process.

○ Welding Consultancy Services

Here at Speciality Welds, we provide a wealth of technical expertise and services to the welding industries, both locally, nationally and internationally. Our expertise extends to cover a wide range of industries, welding processes, materials and environments. If you have a welding issue or just a technical query relating to any of the following topics, we would be pleased to hear be of service.

- Welding Engineering/Technical Advice Services
- Assessment of contract documentation & design reviews
- Welding co-ordination tasks & responsibilities as per ISO 14371:2006
- Technical on-site representation
- Writing, developing and approving welding procedure Specifications
- Qualification testing of welders
- Visual welding inspection and non-destructive testing
- Mechanical analysis and corrosion testing
- Weldability issues and failure analysis
- Writing and auditing of quality documents/systems as detailed in ISO 3834:2005 Quality Requirements for Fusion Welding of Metallic Materials

The world of welding consists of many welding standards, specifications and codes of practice. To ensure you understand and/or fulfil all your obligations, Speciality Welds maintains an extensive library of standards and has access to specialist databases, including British Standards Institute (BSI) for all the latest news, revision and newly published standards. So if you don't have your own in-house specialist welding personnel, let us be your guide.



o Welding Procedure Development & Approval

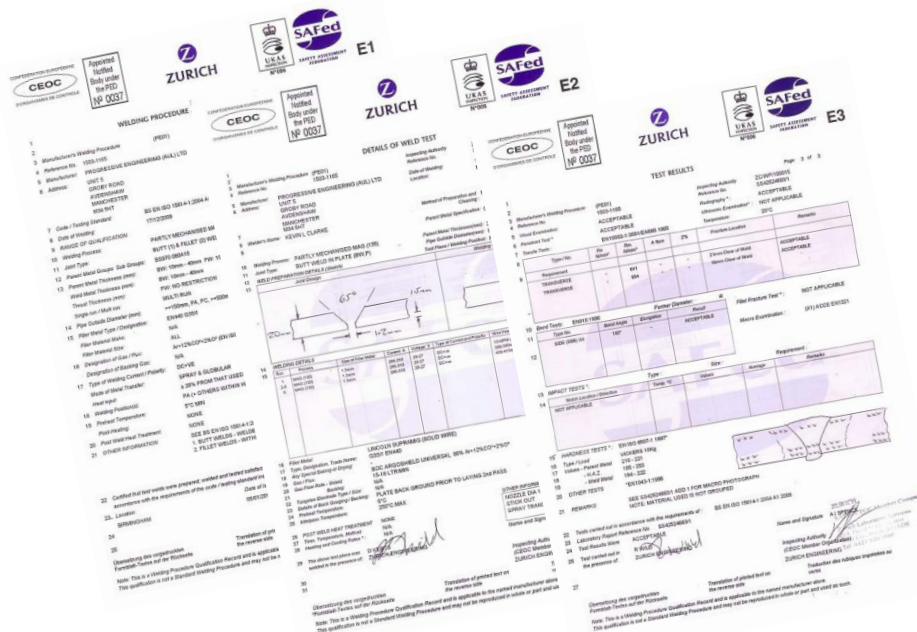
As an approved Zurich Engineering Risk Services Ltd company, we are accredited as official welding surveyors representing Zurich Insurance and therefore, you can be assured of the best advise and service, while taking confidence that all welding Procedure Specifications (WPS) issued are fully approved and endorsed by one of the biggest engineering insurance groups in the world. Zurich is a DTi appointed Notified Body under the pressure equipment directive (PED), a UKAS accredited laboratory, an approved Third Party Organisation (TPO), and SAFed/CEOC members, so whether you operate in a single location or as an international enterprise, we have the technical expertise, local knowledge and global presence to understand your business and develop the right solution.



CONFÉDÉRATION EUROPÉENNE



D'ORGANISMES DE CONTRÔLE

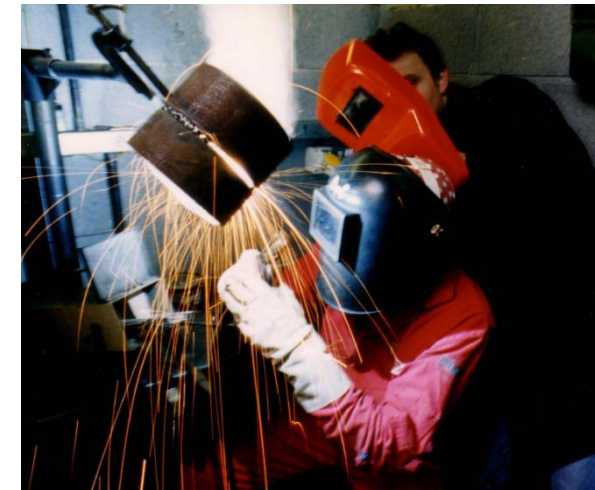


○ Welder Training & Qualification Testing

Speciality Welds have been involved with both industrial and DIY welder training/qualification testing for many years, providing expert advice and services to local, national and international companies/organisations and individuals alike. Our training modules are designed to suit the individual needs of each client, and can be delivered on site, or at our specialist in-house training centre. But whether we come to you, or you come to us, you can be assured of the highest quality instruction and expertise available. We offer training courses in the following welding & cutting processes;

- Manual Metal Arc Welding (MMA)
- Metal Arc Gas -Shielded Welding (MAGS)
- Tungsten Arc Gas-Shielded Welding (TAGS)
- Oxy-Acetylene Welding
- Brazing & Soldering
- Oxy-Fuel Gas Cutting
- Arc Cutting & Gouging
- Plasma Cutting
- Basic Welding Safety – Comes as standard on all courses.

Standard courses are available in sheet, plate and pipe materials, in carbon steels, stainless steels, aluminium alloys and copper alloys, etc. All our training programmes are designed to meet client's individual requirements and are available as single day blocks, or as weekly modules. As official Zurich Insurance accredited welding surveyors, we can also offer you class I and class II qualifications, all under the same roof to all British, European, American and International standards, including BSEN 287-1, 6, BSEN 288-9, ISO 15614-1, ISO 9606-2, BS 4872-1/2, ASME IX, AWS D1.1, D3.6, CAA, and/or client specific. We also offer the DIY enthusiast a basic/introduction to welding.



○ Welding Inspection, NDT & Destructive Testing

As providers of welding inspection, NDT and destructive testing since 1981 you can be assured of an unrivalled level of experience and expertise. We offer highly qualified CSWIP/PCN Level 2/3 engineers and practitioners for on-site or in-house working. Our clients operate mainly in the civil engineering, marine, offshore and general engineering/fabrication, process pipework industries. Our services include inspection for a wide range of welded components and structures, forgings and castings.

Examination Services Include;

- Welding Inspection (SWI) for weldments and Welder/WPS approvals
- Magnetic Particle
- Dye-Penetrant
- Ultrasonic Flaw detection
- Tensile
- Bend Testing
- Macro and Micro examination
- Impact tests (Charpy)
- Fractures
- Corrosion testing



○ Specialist Welding Services

Although not a fabricator, we are pleased to offer a range of specialist, intricate and crack repair welding services, available on a wide range of materials and components, large and small.



○ Underwater Welder Training



As accepted World leaders in the provision of underwater welder training, Speciality Welds are proud to offer a world's first. The only independently quality assured accredited and audited programme of this kind; The Weldcraft-Pro™. This course is fully certified by EAL (EMTA Awards), part of SEMTA - Sector Skills Council for Science, Engineering and Manufacturing Technologies, who are the UK's leading awarding body for engineering qualifications. The course is also recognised by IMarEST, The Institute of Marine Engineering, Science and Technology. The Weldcraft-Pro™ is delivered, under license, through approved diver training schools (see website for full list). The training is based on 80 hours, split over two phases (dry and wet and the course is open to both non-welders and welders alike. All training follows the International Institute of Welding (IIW) and European Welding Federation (EWF) syllabus 570-01 for fillet welder – plate and covers the following topics; (see website for full syllabus).

- Safe underwater welding
- Introduction to SMAW/MMA plant & equipment
- Underwater welding techniques
- Preparing to weld
- Electrode & weld terminology
- Basic weldability & common weld defects encountered
- Monitor & record welding operations
- QA/QC and welding procedures
- Join carbon steel plates using standard techniques

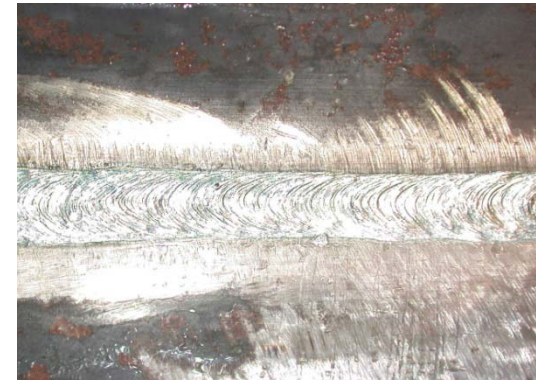
Training is designed to allow commercial divers to be competent in underwater stick (MMA) welding, as prescribed by the IIW/EWF and with welder approval qualification conducted in accordance with BSEN ISO 15618-1, AWS D3.6-99M-C or BS4872-1 welding standards.



○ Underwater Welding & Cutting Products

The **Barracuda 'Gold'** is a specially formulated flux coated MMA welding electrode, with added nickel for improve strength and toughness. It's specially formulated waterproof coating ensures the maximum resistance to moisture penetration, while also allowing for higher levels of misuse in its handling and care. This coating also provides excellent electrical insulation, for improved safety. The electrode has a particularly smooth, soft arc characteristic that welders find very easy to use and it produces a superb weld finish, with easy slag removal. It also offers easy strike-up, via its graphite tip and may be used in all positions. The electrode provides for excellent mechanical properties (see technical data sheet for full details). The **Hammerhead** welding process has been specifically developed to offer an alternative to conventional wet welding, particularly when poor visibility conditions exist. The process, which uses our specially formulated Cr-Ni-Mo electrode, offers a no-skill option to MMA welding. Furthermore, welding can take place without the need for traditional joint preparation as well as eliminating much of the traditional cleaning requirements associated with conventional wet welding and it can even work through painted structures (see technical data sheet for full details).

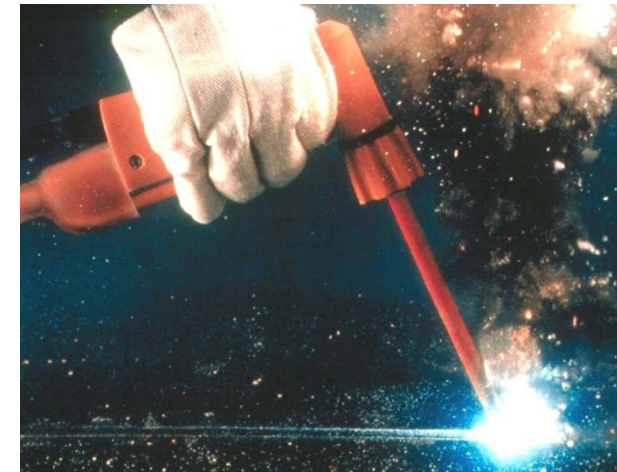
The **Swordfish** arc-cutting electrode offers an alternative to conventional oxy-fuel / exothermic cutting lanes, with improvements in safety and convenience, as no external O2 supply is needed. The electrode will cut all ferrous and non-ferrous materials. The electrodes may be used for piercing holes for bolts, removal of rivets, cutting of chain and other attachments as well as more standard straight line cutting of structures, etc. structures (see technical data sheet for full details).



○ Underwater Welding & Cutting Products..... continued

Our underwater welding **stinger** (torch) is the only electrode holder you'll ever need. Its unique design allows for complete dismantling and replacement of all wearable parts, on site, without the need for any special tools or training. The holder may also be adjusted for wear through its patented design. It has an overall length of 200mm (8"), a diameter of 39mm (1 1/2") and weighs less than 400g (13.5oz). It is easy to use with a simple twist mechanism to tighten and release electrodes and is manufactured from a tough, hardwearing, fully insulating material that is virtually indestructible and provides maximum protection for the diver. The design allows for electrodes ranging from 2.5mm (3/32") to 5.0mm (3/16") to be used, and is available with or without a whip lead and DINSE plug. All parts are available separately.

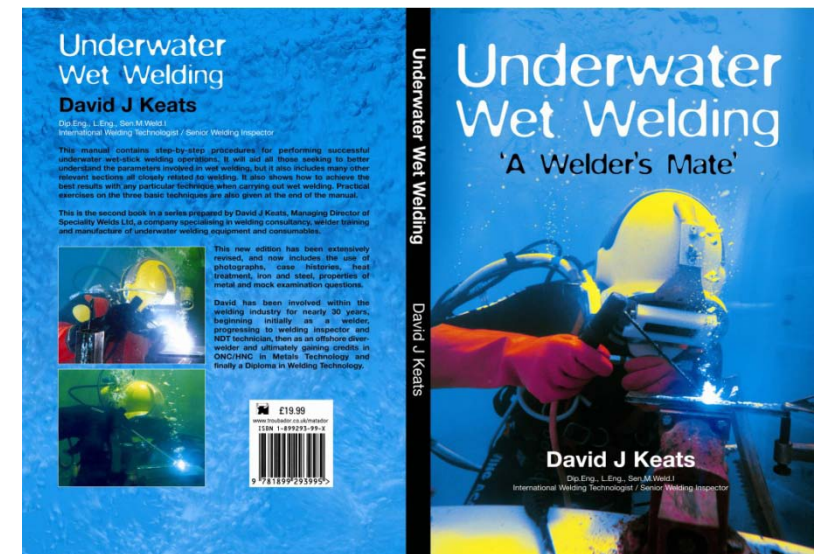
The **Scorpion blue** is our exothermic/oxy-fuel cutting lance. Typical uses include cutting structures, pipelines, removing jetty and pier legs/foundations, cutting through concrete caissons, vessels, propellers, etc. The lance will cut through carbon steels, cast irons, stainless steels, non-ferrous metals, concrete, rock and rope, wood and marine growth. Our **Piranha** welding safety isolation switches allow for safe isolation of welding current/voltage. Units are fitted with amp and volt meters (not Junior) and DIN style quick release cable connectors, with a large 4 pole push/pull switch. Units are available as a portable or fixed wall mounted system. The portable model is housed in a tough, lightweight case. The wall mounted units are housed in an enamelled steel enclosure. Each unit meets CE directives for current carrying equipment. For underwater cutting operations we recommend the Piranha Junior, which is fitted with an indicator lamp, rather than amp/volt meters.



○ Underwater Welding & Cutting Products..... continued

Our fully waterproof 'auto-darkening' welding lens/filter is another first and is the only waterproof welding filter available. The filter fits into a standard KM welding lens assembly and provides a very convenient welding or cutting accessory, allowing the diver to see at all times, making for easy and accurate strike-up and re-striking thus, providing improvements in weld quality and performance. It also makes for a great training aid. The filter is powered by the arc, no batteries, knobs or switches needed and comes with a 2 year no quibble guarantee. The filter is selected to operate at approximately #9, which will typically cover most underwater welding and cutting operations and has background filter strength set at #3. Underwater welding **A Welder's Mate** – written by our MD David J. Keats. This book is a must for all commercial divers interested in the subject of welding and is a great reference manual and source of technical data that should be on every divers bookshelf. This edition contains over 300 pages packed full of useful and easy to follow tips on successful welding and problem solving. Over 200 illustrations and photographs taking you from the early history, a case for wet welding, right through to basic techniques, planning, and mock examination questions. Includes the following chapters;

- Equipment
- Health & Safety
- Underwater Welding Parameters
- Welding Electrodes
- Terminology
- Structure & Properties of Metal
- Basic Metallurgy
- Welding Metallurgy
- Heat Treatments
- Quality Assurance & Quality Control
- Taking a Closer Look
- Practical Exercises
- Mock Examination Questions



○ Diesel Welding Machines

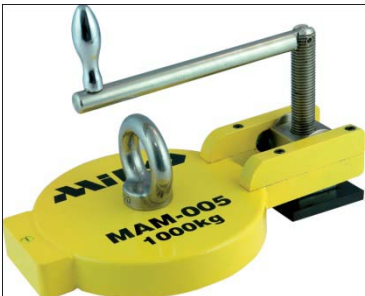
We provide new and fully refurbished diesel welding generators, ideally suited for underwater welding, as well offering excellent welding characteristics for high quality pipe welding applications. All our machines undergo a comprehensive full refurbishment and come with a full 6 month warranty. We offer 300-500 amp capacity either on a road tow trailer, or skid mounted.

○ Inverter Welding Machines

We offer the new Mahe range of inverter based welding and plasma cutting machines. These are available in 110v, 230v and 400v power inputs and from 140 amp, right up to 2500 amps.

○ Miscellaneous Items

A range of miscellaneous items are supplied for both welding and cutting are supplied. These include welding cables (SI and DI) from 35mm² to 95mm² as standard. DINSE cable connectors and bulkhead fittings, high pressure/high flow oxygen regulators, oxy-fuel cutting torches, welding earth (ground) clamps, both magnetic and parallel closing and high strength claw magnets to name but a few.



○ Our Location

